

Claims

1. A method for reducing feedback noise in an optical data recording/reproducing system (10) comprising a laser (18) driven by a current (50, 70) operable to generate a pulsating light (22) emitted from said laser (18) to an external cavity defining an optical length (L) from said laser (18) to an optical storage medium (12), and characterized in that said method comprises: (a) determining relaxation oscillation frequency (ROF) of said pulsating light (22); and (b) adjusting said optical length (L) according to:

$$L = N \cdot c / 2 \cdot ROF,$$

where N is any integer greater than 0, and c is the speed of light.

10 2. A method according to claim 1, wherein said optical storage medium (12) comprises a CD, DVD, Blu-Ray Discs, MDs, Mos or any combination thereof.

15 3. A method according to any one of claims 1 or 2, wherein said determination of the relaxation oscillation frequency comprises simulation or measurement of a specific laser driving current (50, 70) configuration, such as a specific alternating current and direct current driving configuration.

20 4. A method according to any one of claims 1 to 3, wherein said current (50, 70) is operable to generate a pulsating light (22) emitted from said laser (18) to said external cavity, wherein said pulsating light emission (22) comprises a series of optical output pulses, having one optical output pulse (77) per period (76) of said current and each optical output pulse (77) showing only one relaxation oscillation pulse.

25 5. A system (10) comprising a laser (18) driven by a current (50, 70) operable to generate a pulsating light (22) emitted from said laser (18) to an external cavity defining an optical length (L) from said laser (18) to an optical storage medium (12), and characterized in that said system (10) has an optical length (L) defined by:

$$L = N \cdot c / 2 \cdot ROF,$$

where N is any integer greater than zero, ROF is the relaxation oscillation frequency of the pulsating light (22), and c is the speed of light.

6. A system (10) according to claim 5, wherein said current signal (50, 70) is operable
5 to generate a pulsating light emission (22) emitted from said laser (18) to said external cavity, wherein said pulsating light emission (22) comprises a series of optical output pulses, having one optical output pulse (77) per period (76) of said current and each optical output pulse (77) showing only one relaxation oscillation pulse.